

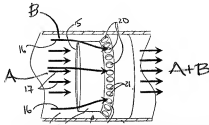
REMARKS

Examiner has rejected claims 1-20 under 35 USC 103(a) as being unpatentable over Hedrick (US Patent 2,150,768) in view of MacKenzie (US Patent 2,065,232)

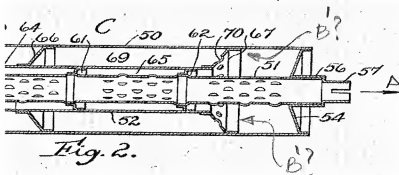
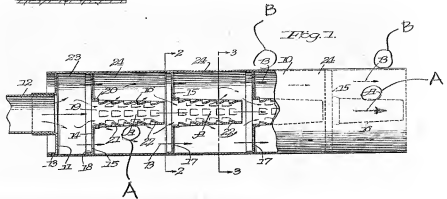
Applicant respectfully traverses Examiner's rejection of claims 1-20 as being unpatentable in view of the combination of Hedrick and MacKenzie.

Applicant has provided herein reproductions of the Figures from Hedrick, MacKenzie and Applicant's invention for side by side structural comparison and to discuss the combination of Hedrick and MacKenzie as suggested by Examiner. Applicant **has not provided the Figures for inclusion into the patent application**, but merely for illustrative purposes alone.

US 10/780,648
Trotter



US 2,150,768
Hedrick



US 2,065,232
MacKenzie et al.

Applicant claims an upstream conduit and an annular wall whereby the flow is separated between a central flow (A) and an annular flow (B). The claimed structure results in the separation of the flows and the recombination of the entirety of the flows to a single flow (A + B)

Hedrick teaches a muffler which splits an exhaust flow into two streams, a high velocity, low pressure central flow (Stream A) which passes through central opening 19 and through tapered nozzle 16 and a low velocity, high pressure flow along the edges of the muffler conduit (Stream B) which passes through perforate member 15. Only when there are two such devices in series and a critical spacing is maintained between the tapered nozzle of the first and the inlet of the tapered nozzle of the second, which prevents expansion of stream A, does the structure permit a portion of stream B to be aspirated to flow into stream A. The structure of Hedricks does not permit, nor result in the same gas flows as in Applicant's invention.

Further, the structure of Applicant's invention results in a physical redirection of the annular flow (B) whereas the structure and critical spacing in Hedricks results in a pressure induced aspiration to combine only a portion of the annular flow (Stream B) into stream A.

MacKenzie teaches a three part conduit comprising an outer shell 50, an inner conduit 51 and an intermediate shell 52. The intermediate shell 52 has apertures 36 for passage of sound waves. MacKenzie has one gas flow passage which is capable of moving gas from upstream to a downstream location. Gas flowing in the conduit 51 cannot flow to any extent into the intermediate shell as the intermediate shell is blocked at a downstream end 60, 61, 62. The inner shell 50 is not open to accept flow except a reverse flow at the discharge end of the shell 50 at baffle 67. The angled baffle 67 is positioned at the end of the three part conduit to direct the sound waves inward, the end baffle leading to a two part conduit at the exit end of the apparatus. The outer annulus between the outer

shell and the intermediate shell is fluidly connected only through the end baffle 67, having apertures 70 therethrough, for connecting the outer flow to a two part conduit and particularly to an annular space at the exit between the outer shell and the inner conduit therebelow. Any flow could only move in a reverse flow as there is no other entrance into the outer shell. Flow through the end baffle would not join the central flow as contemplated in the instant application due to the inner conduit wall which acts to separate between the outer shell and the inner conduit.

Applicant believes that there is no contemplation in Hedrick to immediately direct all of stream B inward toward stream A as there is no opportunity to combine stream A and stream B due to the presence of the downstream extending tapered cone of Hedrick. Thus, one would not be directed by the teachings of Hedrick to combine the teachings of MacKenzie to add the baffle of MacKenzie in place of the perforate member of Hedrick to direct at least a portion of stream B immediately inwards.

If one were to add said end baffle from MacKenzie to the upstream end of Hedrick, as suggested by the Examiner, the resulting structure remain structurally different from that of the instant application because Hedrick comprises the downstream extending tapered cone which would structurally prevent stream B from being combined into stream A as described and claimed in Applicant's claim 1.

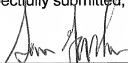
Further, one would have to either alter the structure of Hedrick to accommodate the additional annulus taught in MacKenzie or alter Mackenzie to remove a shell to remove the annulus, which in either case would render Hedrick's apparatus inoperative for the purposes for which it was designed.

Reconsideration of the claims is respectfully requested.

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Respectfully submitted,



Sean W. Goodwin,
Reg # 39,568
Customer # 27522

Goodwin McKay
222 Parkside Place
602-12th avenue S.W.
Calgary, Alberta
CANADA T2R 1J3

Phone (403) 203-0107
Facsimile (403) 203-0403